

11th December 2015

Mrs J M Crofts
Development Control
Vale of Glamorgan Council
Dock Office
Barry Docks
Barry
CF63 4RT

Our Ref: 407.05238.00002
Your Ref: P/DC/JMC/2015/01131/FUL

By Post & email

Dear Mrs Crofts

**RE: PLANNING APPLICATION REFERENCE: 2015/01131/FUL
PROPOSED REMOVAL OF FILL MATERIAL, IMPORTATION OF INERT WASTES
WITH THE PROGRESSIVE RESTORATION OF THE FORMER MINERAL
WORKING AREAS ASSOCIATED WITH THE FORMER ELY BRICKWORKS**

I write in response to your letter (provided via email) dated 8th December 2015, whereby you advised that the local planning authority has received comments from its minerals advisor, Mr Hugh Towns which comprise an objection in principle to further workings of the site and to the proposed waste disposal based on the details submitted.

The aforementioned letter outlined that the primary reason why Mr Towns considered the proposals to be unacceptable relates to the proposed extraction and of 60,000m³ of previously backfilled material to facilitate the proposed restoration, and removal of part of this volume off site.

In order to assist Mr Towns and the Planning Authority in reviewing their objection in principle and in the determination of the planning application, the following paragraphs seek to provide additional clarity on the aforementioned matter in addition to other points raised by Mr Towns;

1.1 Mineral Extraction

As specified by Mr Towns, the application site is classed as a derelict site in the UDP under Policy MIN10, which seeks to prevent further mineral extraction at Ely Brickworks and in paragraph 9.4.30 of the UDP it goes on to state that none of the sites listed (including Ely Brickworks) is in a suitable location for mineral working by today's environmental standards. This is not in dispute.

Mr Towns goes on to state that *"The proposal states that the extraction of approximately 60,000 m³ is necessary to create a void for inert waste"*.

The letter then acknowledges that the site already has planning permission for mineral extraction, and further mineral extraction would only be permitted if a determination of

conditions application is submitted to and approved by the Local Planning Authority. The extant permission will not expire if this permission is granted. As a 'new' mineral extraction operation it would conflict with Policy MIN10.

The comment regarding the extant planning permission is not in dispute, however the proposed development does not include any proposal for "new" mineral extraction. The 60,000m³ of material originally proposed to be extracted as part of the restoration development is not virgin mineral, but is actually previously backfilled material which was deposited in the former brickworks quarry as a result of the A4323 construction.

The 60,000m³ volume represents a maximum estimated backfill volume calculated on an assumed uniform basal level based on trial pits which were completed to assess the properties of the historically backfilled material. It is highly likely that the actual volume of backfilled material will be far less than 60,000m³, as the basal level of the fill material is unlikely to be uniform.

1.2 Restoration v Disposal and Removal of "Surplus" Historically Backfilled Materials

Following his comment on the 60,000m³ of material to be excavated, Mr Towns goes on to state:

"If this is a genuine restoration scheme rather than a landfill site for the disposal of inert waste, there should be no need to remove material from the site unless there are genuine geo-technical reasons for doing so. No Geo-technical assessment has been submitted demonstrating that any material has to be excavated and is of such a type that it cannot be incorporated into the restoration scheme.

Creating an extraction void with the specific intention of filling it with waste is a disposal operation. Remediating a piece of land utilising inert waste is on the other hand a recovery operation in terms of the waste hierarchy. As a disposal operation it is doubtful whether this development could be justified as it would conflict with Policy WAST2 of the UDP, but as a genuine recovery operation it may well be justified as it moves waste that would otherwise be disposed of one step up the waste hierarchy."

Again, this is not disputed. The proposed development is a genuine restoration / recovery scheme which is intended to complete the restoration of what is essentially a partially restored former mineral extraction site, with the intention of blending the final restoration profile back in line with the original hillside at either side of the former brickworks pits. In doing so the inert waste utilised in achieving the proposed restoration profile of the site would indeed move the waste up the waste hierarchy. I can confirm that the applicant is not seeking approval for a landfill operation.

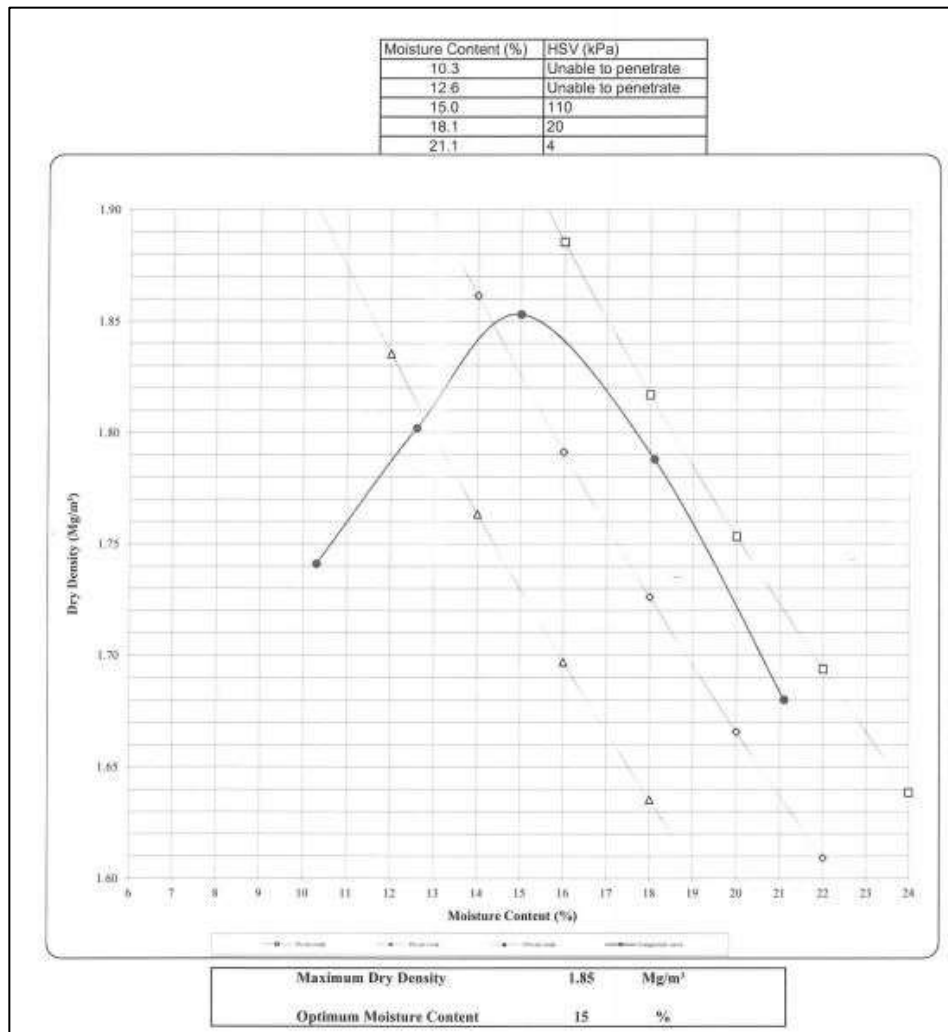
It is considered unlikely, based on material test results undertaken prior to the submission of the application that the historically backfilled material represents an appropriate basal platform on which to commence the emplacement of restoration materials. The extraction of this material was not proposed to create void-space, but due to the properties of the backfilled material being inappropriate as a stable base for the restoration. In order to overcome this issue, it was proposed to remove the historically backfilled material down to original bedrock in order to create a geological barrier on the in-situ brick clay bedrock at the site. Essentially the floor level of the old quarry below the backfilled waste will form the base of the geological barrier.

A site investigation was undertaken in October 2014 to assess the properties of the material within the former brickworks quarry. A number of trial pits were excavated to a depth of

approximately 2 metres below ground level. The arisings from the trial pit excavations varied in colour and depth and had no clear stratification; therefore it was apparent that the material within the quarry were backfilled soils, most likely from the general excavation of the adjacent highway construction.

Representative samples of the clay were sent to a UKAS accredited laboratory for clay characteristics testing, please see a summary table below.

Lab Ref.	Sample Date	Sample Location	Moisture Content (%)	Particle Density (Mg/m3)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index (%)	Clay Content (%)	Permeability (m/s)	MDD (Mg/m3)	OMC (%)
B1	27/10/2014	Backfill	23	2.67	13	33	20	14	3.80E-10	1.80	15
B2	27/10/2014	Backfill	19	2.70	16	34	18	25	1.10E-11	1.85	15
B3	27/10/2014	Backfill	15	2.69	13	31	18	18		1.86	15



The results show that the material is consistent with regard to the atterberg limits, clay content and low permeability, the soil also has a high silt content. The shear strength was tested at different moisture contents when establishing the optimum moisture content/ dry density curves (see figure above). It was found that the shear strength was very low (<20kPa) where moisture content was greater than 18%; two of the three samples (B1 and B2) had a moisture content greater than 18%. For context a good engineered fill would be expected to have a minimum shear strength of >50kPa.

The low shear strength, which is most likely due to the high silt content, would indicate that this material would not be a suitable platform for backfilling with inert waste due to the potential risk of failure. The investigation recommended that the backfill material should be excavated and the virgin material below the backfill should be exposed to ensure that a firm subgrade is achieved prior to construction of a low permeability geological barrier and subsequent backfilling with inert waste. It is anticipated that selected backfill soils will be suitable for construction of the barrier, particularly those at greater depths which would be expected to have lower moisture content and thus greater shear strength than the soils at the surface. The proposal to remove the historically backfilled material is therefore based on the material stability test results.

Having discussed the aforementioned policy conflict concerns with Hugh Towns on 10th December 2015, Mr Towns confirmed that his main concern related to the export of a component of the historical backfill material off site. The proposed export of a proportion of the historically backfilled material was originally anticipated simply due to a lack of space at the application site to temporarily accommodate storage of the "maximum 60,000m³" of backfill material during the construction of the more stable basal level.

The applicant has since reviewed the requirement to export a proportion of the surplus material off site. Given that the volume of extracted backfill material is anticipated to be far lower than the maximum 60,000m³ volume, and a proportion of the material will be utilised for engineering purposes, the "surplus volume" of historically backfilled material is likely to be far less than originally anticipated, and therefore it is considered that there will be sufficient space for this material to be temporarily stored on site during the engineering of the basal level.

The stored material will then be utilised as restoration material that will be replaced above the engineered basal level and re-profiled in conjunction with imported inert waste materials to achieve the proposed restoration profile. Therefore removing the requirement to export any material off site – all historically backfilled material would be utilised in the proposed restoration scheme.

The retention of this material on site and its replacement and re-profiling to facilitate the proposed restoration of the former mineral working provides further confirmation that the proposed development is indeed a genuine restoration scheme. Furthermore by utilising all of the historically backfilled materials in the restoration scheme the volume of inert waste material to be imported will be correspondingly lower than originally anticipated.

I would add that the retention of this material on site still adheres to the description of the proposed development in that the fill material will still be removed, albeit not off site stored on site for a temporary period before being utilised along with imported materials to achieve the restoration profile.

1.3 C&D Waste Arisings

Your letter then raises the issue that the submitted Waste Management Assessment did not have regard to the statistical data which is included in The Survey of Construction and Demolition Waste Generated in Wales 2012. Furthermore, it was mentioned that the submitted Waste Planning Assessment “*does not identify the amount of material that is likely to be available – is 40,000m³ per annum for 5 years realistic and where are the alternative sites where this material is currently utilised and where the material could be accommodated in future – essentially what is the landfill need and why can't the material be re-used or recycled?*”

In response to these queries, as the proposed development is a genuine restoration scheme and not a proposed landfill operation, modest tonnages - **30,000 tonnes to 40,000 tonnes** as specified in the planning statement, not 40,000m³ which was a typographical error in the waste planning assessment - are anticipated to be received each year.

These volumes are anticipated to comprise “residual” inert wastes i.e. soils and other inert waste material which the construction and demolition waste (C&D waste) contractors in the Cardiff and Vale of Glamorgan area cannot recycle in line with planning policy & waste strategy. It is also anticipated that excavated soils and clays from development/highway schemes in the vicinity which are incapable of recycling will also be accepted.

In terms of the need for the facility, it is not considered appropriate to establish the need for additional inert landfill capacity in the locality, as stressed previously the proposed development does not constitute a landfill operation but would be a restoration / recovery operation. However consideration must be had to the volume of inert waste arising in the locality in order that the site can secure appropriate volumes of restoration material. Therefore further consideration has been given to the Survey of Construction and Demolition Waste Generated in Wales 2012 (the 2012 Survey), as well as other publicly available sources of information on waste management in Wales.

It is an established fact that the data relating to C&D waste is limited, with Agencies such as NRW and the Environment Agency attempting to narrow the gap between data provision and analysis between C&D waste and the far more detailed statistics available for municipal waste.

1.3.1 Survey of Construction and Demolition Waste Generated in Wales 2012

The 2012 Survey is the initial study undertaken by NRW in this process, and seeks to provide this data analysis on both a National and Regional basis. The regional basis is divided between North Wales, South East Wales and South West Wales. NRW themselves outline the limitations of the 2012 Survey, and its use for determining trends beyond the specified year (2012):

“The quantity of waste landfilled in 2012 was approximately 639,000 tonnes. Comparison with previous survey results should not be made because:

- *The definition of waste has changed considerably since the previous survey, excluding a large amount of material which was previously recorded as waste.*
- *The recession impacted significantly on the construction sector, reducing output and therefore waste generation.*
- *There were no major infrastructure projects accounting for very large quantities of waste in 2012. This contrasts with 2005/06 when three of the five largest waste producers were involved in major projects. This illustrates the difficulty in comparing data from single years.*

- *The geographical data for 2012 is reported based on the location of the construction/demolition site as opposed to the location of the business office. This reflects the fact that C&D waste generally needs to be managed close to the site of production.”*

With a particular focus on the data for South East Wales, the following statistics of relevance are provided for calendar year 2012 in the 2012 Survey:

	North Wales	South-East Wales	South-West	Total Wales
C&D waste generated in 2012	744,820	1,437,350	1,177,330	3,359,500
Volume of C&D Waste managed by Land disposal in 2012	45,030	131,110	463,250	639,390
Volume of C&D Waste managed by Backfilling in 2012	75,120	1,440	53,860	130,430

The above statistics illustrate that commercial and industrial waste arisings in South East Wales in 2012 amounted to approximately 1.44 million tonnes. Of this volume, approximately **132,550 tonnes** (9%) was landfilled and backfilled.

1.3.2 2012 Waste Interrogator Data

The 2012 Survey data is somewhat at odds with the “Waste Data Interrogator & Reporting Tool”, an online database created by the Environment Agency, which included waste statistical data for Wales prior to the creation of NRW. All operators of regulated waste management facilities have to provide the EA with details of the quantities and types of waste they deal with i.e. waste received into site and waste sent on from site to other facilities or processes. This data is used to monitor compliance but has historically been used by the EC, DEFRA and local authorities to assist in planning for new waste facilities and for monitoring against statutory targets.

The total volume of inert waste (including C&D waste) accepted and noted on the formal waste returns at the South East Wales sites in 2012 according to the waste interrogator was **354,527 tonnes**. This figure clearly does not tally with the 2012 Survey data, with a total inert waste landfill/backfill volume of nearly treble that reported in the 2012 survey. However this is likely to be due to the fact that the 2012 Survey only reflects C&D waste and not other waste streams which qualify as being inert.

It should also be noted that the volume of waste arising in 2012 was recorded in a period under recessionary conditions, as recognised by NRW and as the generation of construction and demolition waste is directly correlated to the level of construction activity and infrastructure development C&D waste arisings in 2012 were impacted “significantly” by the recession.

Therefore the level of inert waste arisings in the locality of the application site must have regard to the level of proposed construction activity within the catchment area of the site over the proposed life of the restoration / recovery activities. The following paragraphs consider some of the major projects which have been identified in the private and public sector in the Cardiff and Vale of Glamorgan Local Authority Areas that are likely to give rise to appropriate waste arisings.

1.3.3 Planned and Committed Construction Projects in Cardiff & the VoG

At a National level, the Welsh Government place infrastructure investment as one of their highest priorities. The Wales Infrastructure Investment Plan 2015 (WIIP) is designed to

prioritise, scope and coordinate delivery of major infrastructure investments. The June 2015 Project Pipeline update to WIIP, Annexe 1.1 identifies Welsh Government (WG) programmes and projects where total scheme value exceeds £15m; Annexe 1.2 identifies all Welsh Local Authority (LA) schemes where: the total estimated value of the scheme exceeds £2m; and Annexe 1.3 includes Private Sector schemes. All of the schemes are either already being delivered, or planned to start in the next 3 years.

There are approximately 20 Local Authority schemes located within the Vale of Glamorgan and Cardiff (WIPP Annexe 2) that comprise construction and demolition activities. These projects have a total forecast project value of **£410 million** (Vale of Glamorgan £115 million, Cardiff £295 million) to be delivered in the next 3 years. A summarised extract of these projects is enclosed.

The above does not include private initiatives planned by Dwr Cymru, Network Rail and the private sector across the Vale of Glamorgan and Cardiff, for example:

- Ongoing Central Square Development (ongoing);
- Cardiff Central Station concourse expansion (planned);
- Capital Quarter development (ongoing);
- Callaghan Square expansion – 750,000 sq ft offices (planned);
- Dumballs Road mixed community major development – 2600 homes (planned);
- Cardiff University Maindy Innovation Campus (planned);
- 33 acre brownfield Porth Teigr mixed use development – 1000 homes (planned); and
- Cardiff Waterside (planned).

Clearly the level of construction and development activity within the 15km catchment area of the application site has increased significantly since the 2012 Survey. It is therefore reasonable to assume based on the pipeline of projects, that this growth can be sustained and increase, ensuring that there will be a high volume of construction and demolition waste arising, much of which will be incapable of recovery / recycling and will need to be managed at either restoration / recovery sites or landfills during the proposed timescale of the restoration at the application site.

1.3.4 Current Licenced Recovery / Disposal Facilities

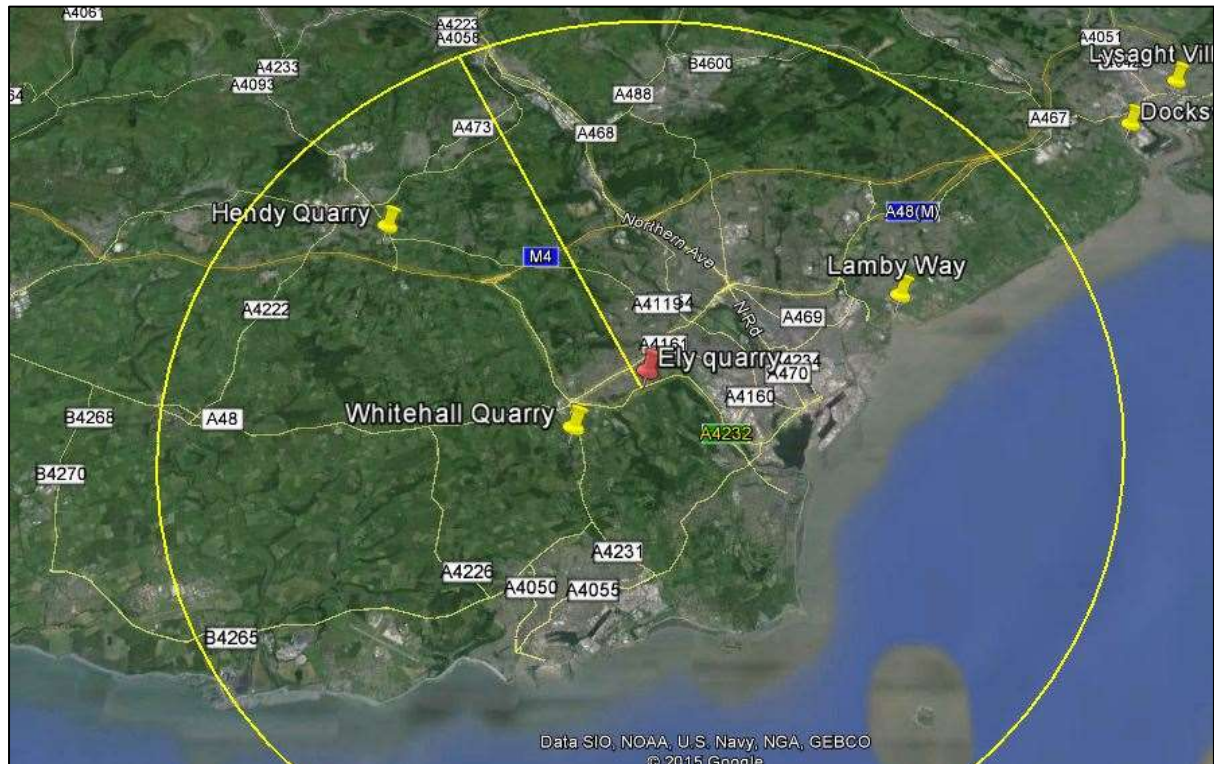
Finally, consideration has to be given to the current number of sites which are licenced to accept inert wastes in the locality of the application site (i.e. the existing inert landfill / recovery capacity). The waste interrogator dataset for calendar year 2012 holds the data from around 6,000 regulated sites, and confirmed that in South East Wales there were 9 facilities licenced to accept inert waste either as a disposal operation or as a recovery operation, albeit 1 of these facilities (RWE NPower at Aberthaw – incidentally the only licenced facility in the Vale of Glamorgan) was a restricted landfill accepting quarry ash only.

As illustrated in the Table below, in 2012 there were 8 licenced facilities capable of accepting inert waste material.

Waste Planning Authority	Permit No	Site Name	Operator	Permit Type	Site Postcode	Facility Type
Caerphilly	DB3639AZ (103652)	Bryn Quarry Ltd	Bryn Quarry Ltd	A25 : Deposit of waste to land as a recovery operation	CF82 8FY	Deposit of waste to land (recovery)

Cardiff	JP3239ST	Lamby Way Landfill Site	Cardiff Council	L04 : Non Hazardous LF	CF3 8EQ	Non Hazardous LF
Cardiff	MP3036SS (210013)	Whitehall Landfill	Cemex U K Materials Ltd	L05 : Inert LF	CF5 6AW	Inert LF
Merthyr Tydfil	RP3733PC	Trecatti Landfill Site	Biffa Waste Services Ltd	L04 : Non Hazardous LF	CF48 4AB	Non Hazardous LF
Newport	DP3733BK	Docksway Landfill - Area 2	Newport City Council	L04 : Non Hazardous LF	NP20 2NS	Non Hazardous LF
Newport	ZP3699VA (102924)	Lysaght Village Newport	Taylor Wimpey U K Ltd	A25 : Deposit of waste to land as a recovery operation	NP19 0HE	Deposit of waste to land (recovery)
Rhondda, Cynon, Taff	DP3732SQ	Bryn Pica Landfill Site	Cynon Valley Waste Disposal Company Ltd	L02 : Non Haz (SNRHW) LF	CF44 0BX	Non Haz (SNRHW) LF
Rhondda, Cynon, Taff	KP3795FU (30266)	Hendy Quarry Landfill	Tarmac Ltd	L05 : Inert LF	CF72 8PG	Inert LF

Geographically the application site is located within South East Wales, and based on an estimated catchment area for C&D waste arisings and management of 15km encompassing Cardiff and the Vale of Glamorgan, there are only 3 of the above licenced facilities which could be considered to be “competing sites” for residual C&D wastes.



Of these 3 sites, we understand that Cemex’s Whitehall Landfill is nearing the end of its operational life, Lamby Way is a non-hazardous landfill which is more likely to accept higher value municipal, and commercial & industrial waste streams under contract than C&D

wastes, and Tarmac's Hendy Quarry we understand has a licence for inert waste recycling, which would suggest that the operators focus is on recycling as opposed to restoration of the operational quarry void.

The apparent limited number of facilities to accept residual C&D wastes and fill material from infrastructure projects in the Cardiff and Vale of Glamorgan area coupled with the prime position of the application site in close proximity to the increasing sources of infill material (i.e. City Centre construction sites) over the restoration timescale will reduce the travel time and cost of C&D contractors in transporting this material to the licenced facilities ensuring that the modest annual tonnages of restoration material can be attracted to the site to achieve the proposed restoration within the estimated timescale. The proximity of the site to potential sources of infill material re-enforces the sustainability credentials of the development.

1.4 Proposed Land Profile

Mr Towns also mentions that the proposed land profiles after the landfilling on Phase 3 and 4 are "too angular" and should be more natural in profile.

Having discussed this matter with Mr Towns, the angular profile that he refers to relates to the "inset" cross sections on Application Drawings 5238/06 and 5238/07 that illustrate the restored Phase 3 and 4 respectively.

It was highlighted to Mr Towns that the cross sections are not to scale (as specified on the drawings) and due to this fact are perceived as somewhat "angular". The cross sections were very much conceptual, and for indicative purposes only, and the topographical plan is the proposed restored landform, which provides for a softer profile at the top of the crest of both Phase 3 and 4. This softer profile is the landform which the restoration of the site to native woodland that will tie both visually and physically to the adjacent landscape has been based.

Mr Towns also mentioned that there is no construction method statement for the infilling (other than the geological barrier) and therefore no indication of the stability of the landform is provided.

I can also confirm that outline stability analysis has been carried out on the proposed restoration profile, using typical parameters for inert waste, which assumed that the existing in-situ ground profile (i.e. the proposed basal level following removal of the backfilled soils) is competent and stable and will not pose a stability risk during excavation of the soils and replacement with inert waste material..

Acceptable factors of safety were recorded under both favourable and unfavourable pore pressure conditions.

With regard a construction method statement it was envisaged that such a scheme would be submitted to facilitate the grant of the NRW permit, which would include more detail on the geotechnical properties of the in-situ quarry slopes and characterisation of the proposed inert waste material. However the applicant would be happy to accept a planning condition that requires the provision of such a statement prior to the commencement of development, which would address the methodology of infilling and indeed final restoration, planting and aftercare.

I trust that the content of this letter provides you with the necessary clarity and information you have specified in your letter, such that you are be able to reconsider the objection in principle, and I respectfully request that this application be approved accordingly. In that

respect, I would be grateful if you could confirm your intentions regarding the timescale for determination and recommendation in the context of the above comments.

Should you have any queries or further requests for clarification please do not hesitate to contact me on 02920 491010.

Yours sincerely
SLR Consulting Limited



Huw Richards
Technical Director

C.c. Hugh Towns

Enc Summary of WIIP planned projects Cardiff & VoG